

**REMARKS**

In light of the preceding amendments and following remarks, reconsideration of the present application is respectfully requested.

Claims 1-7, 10-16, 18, and 21-27 are pending in the application. Claim 1 is an independent claim. Claim 1 is amended.

**35 U.S.C. §103 Rejections**

***Hisai/Hoang***

Claims 1, 3-7, and 26 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Hisai et al. (U.S. Publication No. 2003/0192686, hereinafter “Hisai”) in view of Hoang (U.S. Patent No. 2003/0159808, hereinafter “Hoang”). Applicants respectfully traverse these rejections.

Claim 1 recites, *inter alia*, “wherein the coolant is supplied into the heatpipe via a path and the coolant storage tank receives the coolant supplied to the heatpipe via the path, the path being between the coolant storage tank and the heatpipe.” Emphasis added.

The Examiner acknowledges on page 3 of the Office Action, that:

Hisai et al fail to disclose that the heat pipe is arranged in proximity and external to the plate with the heater disposed therebetween; the heat pipe and the plate being discrete elements and the heater being disposed between the heat pipe and the plate; and a coolant storage tank for supplying the coolant to the cooling element when the plate is cooled and for receiving the coolant when the plate is heated, wherein the coolant supplied to the heat pipe via a path and the coolant storage tank receives the coolant supplied to the heat pipe via the path.

The Examiner alleges that Hoang repairs the deficiency of Hisai, because:

Hoang teaches a loop heat pipe apparatus (referring to figure 1) that includes an evaporator heat pipe (100), a reservoir (110), a coolant supply line (vapor/liquid line as illustrated in figure 1), wherein a vaporizable coolant is supplied to the evaporator heat pipe from the reservoir and returned to the reservoir while a device that outputs heat

positioned near the heat pipe is heated and cooled (see paragraph 22 and 24). It is noted that the device can be heated and cooled simultaneously since heat is inputted [sic] while the fluid flows through the device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the system of Hisai et al. to include the heat pipe, reservoir, coolant supply line, and the function of a coolant being sent to and from a reservoir tank while a device is being cooled as taught by Hoang in order to maintain the wafer at a constant temperature, thus preventing deformation in the circuitry of the wafer.

Accordingly, the Examiner acknowledges that Hisai fails to disclose, at least, "wherein the coolant supplied to the heat pipe via a path and the coolant storage tank receives the coolant supplied to the heat pipe via the path[.]" and relies on Hoang for these features. Office Action, p. 3. Hoang discloses a vapor/liquid line that connects a reservoir 110, an ECP 100 and a condenser 130. Hoang, FIG. 1. The vapor/liquid line of Hoang includes a portion that connects one end of the reservoir 110 to one end of the ECP 100. The portion of the vapor/liquid line is used as a path to supply a coolant to the ECP 100 and a coolant supplied to the ECP 100 is not returned via the portion of the vapor/liquid line. The vapor/liquid line of Hoang continues through the condenser 130 and back to the reservoir 110. Hoang discloses a cooling loop and does not disclose a bidirectional path through which a coolant is supplied and returned. Accordingly, Hoang fails to disclose that the path for supplying coolant to, and receiving coolant from, the heatpipe is "between the coolant storage tank and the heatpipe[.]" as recited by claim 1.

Neither Hisai nor Hoang, alone or in combination, disclose every element of claim 1. Therefore, even assuming, *arguendo*, that Hoang could be combined with Hisai (which Applicants do not admit), Hisai in view of Hoang cannot render claim 1 obvious. Claims 2-7, 10-16, 18 and 21-27 are patentable at least by virtue of their

dependency from claim 1. Withdrawal of the rejections and allowance of claims 1-7, 10-16, 18 and 21-27, is respectfully requested.

***Hisai/Hoang/Hara***

Claims 6, 12-16, 18 and 21-24 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Hisai as modified by Hoang as applied to claims 1, 6 and 7 and further in view of Hara et al. (U.S. Patent No. 5,413,167, hereinafter "Hara"). Applicants respectfully traverse this rejection in that even assuming *arguendo* that Hoang and/or Hara could be combined with Hisai (which Applicants do not admit), the combination of references fails to render even claim 1 obvious because Hoang and Hara suffer from at least the same deficiencies as Hisai with respect to claim 1. Therefore, even in combination, Hisai in view of Hoang and Hara fails to render claims 6, 12-16, 18 and 21-24 obvious because claims 6, 12-16, 18 and 21-24 depend from claim 1. Withdrawal of these rejections is requested.

***Hisai/Hoang/Leffert***

Claims 2, 10, 11 and 25 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Hisai as modified by Hoang as applied to claim 1 above, and further in view of Leffert (U.S. Patent No. 3,621,906, hereinafter "Leffert"). Applicants respectfully traverse this rejection in that even assuming *arguendo* that Hoang and/or Leffert could be combined with Hisai (which Applicants do not admit), the combination of references fails to render even claim 1 obvious because Hoang and Leffert suffer from at least the same deficiencies as Hisai with respect to claim 1. Therefore, even in combination, Hisai in view of Hoang and Leffert fails to render claims 2, 10, 11 and 25

obvious because claims 2, 10, 11 and 25 depend from claim 1. Withdrawal of these rejections is requested.

***Hisai/Hoang/Komino***

Claim 27 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Hisai et al. as modified by Hoang as applied to claim 3 above, and further in view of Komino (JP 5315293, hereinafter "Komino"). Applicants respectfully traverse this rejection in that even assuming *arguendo* that Hoang and/or Komino could be combined with Hisai (which Applicants do not admit), the combination of references fails to render even claim 1 obvious because Hoang and Komino suffer from at least the same deficiencies as Hisai with respect to claim 1. Therefore, even in combination, Hisai in view of Hoang and Komino fails to render claim 27 obvious because claim 27 depends from claim 1. Withdrawal of this rejection is requested.

**CONCLUSION**

In view of the above remarks and amendments, the Applicants respectfully submit that each of the pending rejections has been addressed and overcome, placing the present application in condition for allowance. A notice to that effect is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,  
HARNESS, DICKEY, & PIERCE, P.L.C.

By

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